

**REMARKS**

**The Amendments**

The amendment at page 3 of the specification corrects an obvious typographical error. It would be clear to one of ordinary skill in the art that the pore size range discussed has a minimum in "nm" not "mm." This correction is also supported by the foreign priority document.

Claim 1 is amended to add that the porous solid contains a liquid electrolyte in the pores thereof; see, e.g., page 3, lines 5-8, of the specification. The claims have otherwise been amended to address the 35 U.S.C. § 112/101 rejections and for non-substantive clarification purposes. These latter amendments do not narrow the scope of the claims. New dependent claims have also been added which are fully supported by the disclosure, for example, at page 3, lines 1-3 and 16-25; and, page 4, lines 21-38.

To the extent that the amendments avoid the prior art or for other reasons related to patentability, competitors are warned that the amendments are not intended to and do not limit the scope of equivalents which may be asserted on subject matter outside the literal scope of any patented claims but not anticipated or rendered obvious by the prior art or otherwise unpatentable to applicants. Applicants reserve the right to file one or more continuing and/or divisional applications directed to any subject matter disclosed in the application which has been canceled by any of the above amendments.

**The Rejections under 35 U.S.C. § 112, second paragraph, and 35 U.S.C. § 101**

The rejections of claims 1-16 under 35 U.S.C. § 112, second paragraph, and of claims 14-16 under 35 U.S.C. § 101 are respectfully traversed.

It is believed that the above amendments render at least some bases of the rejections moot. The potentially remaining issues are addressed below.

The “essentially” terms are proper and would be well understood by one of ordinary skill in the art. Few properties in chemistry are absolutes, the “essentially” term defines that the property is met for all purposes of conducting the invention even if there is not a 100% attainment. For example, it would be evident to one of ordinary skill in the art that “essentially immiscible” in the context of this invention means that the two phases are immiscible in the solid state to the extent of allowing the forming of porosity by removal of the second phase. One of ordinary skill in the art would understand that this can be the case even if the second phase had a slight degree of miscibility in the first phase. Similarly, the “essentially eutectic” mixture would be understood by one of ordinary skill in the art as meaning a mixture at or near the eutectic point such that the effect of the eutectic is observed. Guidelines for the extent of variance from the eutectic point are given in the specification; see, e.g., page 5, lines 1-7. Thus, the metes and bounds of this term would be well understood by one of ordinary skill in the art. In this case, the claims are proper under 35 U.S.C. § 112, second paragraph. See, e.g., Morton Int. Inc. v. Cardinal Chem. Co., 28 USPQ 1190 (Fed. Cir. 1993).

The “non-segregating conditions” term has been clarified and it is believed to be clear what components are not segregated in this claim, i.e., the first and second phases. Further, the disclosure at page 4, lines 21-38, makes clear that the embodiments facilitating crystal growth of the first phase are different from the embodiments conducted under non-segregating conditions. The non-segregating conditions avoid formation of substantial crystals and provides a different porosity characteristic.

For all of the above reasons, it is urged that the rejections under 35 U.S.C. § 112 and § 101 should be withdrawn.

**The Rejection over Leonard**

The rejection of claims 1-16 under 35 U.S.C. § 102, as being anticipated by, or under 35 U.S.C. § 103, as being obvious over, Leonard (U.S. Patent No. 3,681,136) is respectfully traversed.

Leonard discloses a method for forming what they call a porous metal salt layer on a metal substrate surface.

Leonard fails to disclose or suggest preparation of a porous solid which contains a liquid electrolyte in the pores. Leonard discloses nothing at all regarding filling the “pores” of its resulting materials with a liquid electrolyte. Further, it is not clear that the Leonard materials could be filled with a liquid, even if that was indicated by the reference to be desired. As shown in Figure 3 of the reference, the structure of the metal salt layer in Leonard is more of a structure of fibers of the remaining metal salt, which Leonard terms as “prills”; see, e.g., col. 3, lines 59-68. It would not appear that such prill structure would be capable of being filled with a liquid and it is distinct from what is normally considered as described by the term porous.

In the Office Action, the filling of the pores with fluid language was addressed as being a non-limiting intended use recitation in the previous claims. This statement certainly does not apply to the instant claims reciting a positive step for such filling and a resulting porous solid filled with a liquid electrolyte.

For all of the above reasons, at least, it is urged that Leonard fails to teach or suggest the claimed invention to one of ordinary skill in the art. Thus, the rejection under either 35 U.S.C. § 102 or 35 U.S.C. § 103 should be withdrawn.

**The Rejection over Shen**

The rejection of claims 10-16 under 35 U.S.C. § 102, as being anticipated by, or under 35 U.S.C. § 103, as being obvious over, Shen (U.S. Patent No. 5,650,054) is respectfully traversed.

Shen discloses electrochemical gas sensors having electrodes and a solid proton conductor membrane. The sensor contains a water reservoir to provide a water vapor saturated atmosphere for the sensor. It is clear that the electrodes and membrane are not immersed in the water reservoir; see e.g., Figures 2-4, and the description at col. 7, lines 3-16. The nature of the proton conductor membrane is discussed at col. 8, lines 21-55, for example.

Shen does not disclose that the proton conductor membrane is porous, as alleged in the Office Action. The Office Action points to col. 8, lines 21-63, to support such teaching but the reference discusses the proton conductor membrane only at col. 8, lines 21-55, of this section. The discussion at col. 8, lines 56-63, is of a separate element, i.e., a microporous hydrophobic membrane. See Fig. 2 wherein the proton conductor member, element 12, is a completely separate element from the microporous hydrophobic membrane, element 204.

Shen does not disclose or suggest that its proton conductor membrane is porous. Shen uses the term “microporous” in connection with the separate hydrophobic membrane, not the proton conductor membrane. The microporous hydrophobic membrane is of a polymer material, not an inorganic ionic material. Thus, Shen does not disclose or suggest any “porous solid” which is formed of a “first phase which includes one or more inorganic ionic

components” or any sensor or other article which contains such a porous solid. Compare instant claim 1. (It, obviously, also does not disclose or suggest any method for making such a material.)

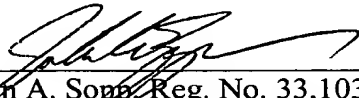
Additionally, Shen also fails to disclose a porous solid which is filled with a liquid electrolyte. Even if any of the Shen components met the instant claim recitations – which they do not – none of the components is a porous material which is filled with a liquid electrolyte. To the contrary, one of the principal objectives of Shen is to avoid the use of porous materials filled with a liquid. See the Background discussion at col. 2, line 6, to col. 4, line 16, particularly noting the problems resulting from liquid electrolytes and the desire to provide a sensor with all solid conductor components. Accordingly, the resulting product of the Shen invention avoids any type of porous material filled with a liquid and is directly contrary to suggesting applicants’ invention. The water reservoir component in the Shen sensor is merely that, a reservoir. It provides no liquid water, only water vapor, to the conductor components of the Shen sensor. For this additional reason, Shen cannot teach or suggest the claimed invention.

For all of the above reasons, at least, it is urged that Shen fails to teach or suggest the claimed invention to one of ordinary skill in the art. Thus, the rejection under either 35 U.S.C. § 102 or 35 U.S.C. § 103 should be withdrawn.

It is submitted that the claims are in condition for allowance. However, the Examiner is kindly invited to contact the undersigned to discuss any unresolved matters.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

  
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